

Amendment to the Claims

Claims 1-14 (Cancelled)

15. (Currently Amended) An arrangement of ~~one or more at least one~~ structural elements-
element for use in an electrolysis cell for production of aluminum metal from a component containing aluminum in a fused salt, where the component containing aluminum is mainly alumina and the fused salt is mainly based on mixtures of NaF and AlF_3 and CaF_2 , possibly plus alkali and alkaline earth halides,

wherein the structural element is arranged in the ~~electrolysis cell lining, cell's lining, or~~
~~constitutes at least a part of it; and the structural element is plate shaped and made out of a~~
material resistant to a corrosive environment in the cell, and further having a system of ducts the
~~structural element is designed with ducts~~ formed directly in it and thereby constituting an integral part of ~~said the~~ structural element, said ducts being arranged for the through-flow of a medium and further designed so that they can be used for active control of the side layer's thickness and heat transfer through the cell lining, and said ducts are connected to an outer circuit.

16.(Previously Presented) An arrangement in accordance with claim 15, wherein the ducts are designed with a mainly circular cross-section with a smooth, star-shaped, spiked or sinusoidal surface.

17-21. (Cancelled)

22.(Previously Presented) An arrangement in accordance with claim 15, wherein each of the structural elements is made of ceramics based on carbon, carbides, nitrides, borides or oxides or mixtures of these materials.

23.(Previously Presented) An arrangement in accordance with claim 15, wherein each of the structural elements is made of carbon, silicon nitride, aluminum nitride, silicon carbide, silicon oxynitride, silicon aluminum oxynitride, titanium diboride, zirconium diboride or mixtures of these materials.

24.(Previously Presented) An arrangement in accordance with claim 15, wherein each of the structural elements is made by dry or wet pressing, slip casting and/or stamping and the ducts are made by means of grooves in plates that are subsequently glued together before sintering.

25.(Previously Presented) An arrangement in accordance with claim 15, wherein each of the structural elements is made using the so-called lost wax method, burnout material and/or cutting out plates for subsequent assembly in accordance with the laminar method.

26.(Previously Presented) An arrangement in accordance with claim 15, wherein each of the structural elements is made using production methods that ensure gastight elements made by optimizing the green body and/or glazing/impregnation of the finished material.

27.(Previously Presented) An arrangement in accordance with claim 15, wherein each of the structural elements is provided with sleeves and/or transitions for connection to an outer circuit.

28.(Previously Presented) An arrangement in accordance with claim 24, wherein each of the structural elements is made using glue based on refractory cements, silicon metal, etc. to join the parts before sintering and to contribute to the elements being gastight after sintering.

29. (New) An electrolysis cell for production of aluminum metal from a component containing aluminum in a fused salt, where the component containing aluminum is mainly alumina and the fused salt is mainly based on mixtures of NaF and AlF_3 and CaF_2 , possibly plus alkali and alkaline earth halides, the electrolysis cell comprising:

a cathode case;

a side lining disposed inside of the cathode case, the side lining including at least one side lining plate and at least one duct forming a cooling loop within the side lining plate for receiving and circulating coolant supplied from outside of the cathode case,

wherein the plate is formed of a material that is resistant to a corrosive environment in the cell and is operable to permit active control of heat transfer through the cell lining; and

an outer coolant circuit disposed outside of the cathode case and connected to said duct.

30. (New) The electrolysis cell as claimed in claim 29, further comprising a plurality of the plates

arranged in the side lining of the electrolysis cell, wherein the plates are connected together to form a continuous cooling loop.

31. (New) The electrolysis cell as claimed in claim 30, further comprising carbon anodes and/or inert anodes.

32. (New) The electrolysis cell as claimed in claim 30, further comprising electrodes arranged vertically and/or horizontally.

33. (New) The electrolysis cell as claimed in claim 30, wherein each of the plates is made of ceramics based on carbon, carbides, nitrides, borides or oxides or mixtures of these materials.

34. (New) The electrolysis cell as claimed in claim 30, wherein each of the plates is made of carbon, silicon nitride, aluminum nitride, silicon carbide, silicon oxynitride, silicon aluminum oxynitride, titanium diboride, zirconium diboride or mixtures of these materials.

34. (New) The electrolysis cell as claimed in claim 30, wherein each of the plates elements is provided with sleeves and/or transitions for connection to the outer coolant circuit.

35. (New) The electrolysis cell as claimed in claim 30, wherein each of the ducts are formed so as to have an outer circular cross-section and a star-shaped, spiked or sinusoidal inner surface.

36.(New) The electrolysis cell as claimed in claim 30, wherein each of the plate elements is made by dry or wet pressing, slip casting and/or stamping, and the ducts are made by means of grooves in plates that are subsequently glued together before sintering.